

THREAT SIMULATION OVERVIEW

Hd ATSO

Point Mugu, CA



Content...

- ATSO Charter
- Products
- Programs supported
- Exploitation process (ATSO style)
- VV&A Considerations



Threat Simulation

➤ Purpose

- Development, deployment, and use of electronic combat threat simulation equipment that provides realistic threat radar signals and threat electronic attack (EA) signals

➤ Threats

➤ Radar Signals

- Anti-ship cruise missiles and associated targeting radars
- Surface-to-air missiles and associated radars

➤ EA Signals (jammers)

- All observed and projected FSU and third world EA systems

➤ Use

- Weapon development test and evaluation



Threat Simulation

(Con't)

➤ Applications

- Laboratories
- Land Based
- In/On Manned Aircraft
- In/On Unmanned Targets

➤ Involvement

- Intel Assessment
- Exploitation
- Development
- T&E
- Procurement
- System Integration
- ILS
- In-Service Engineering
- Depot



Tri-Service Program



AIR FORCE



NAVY

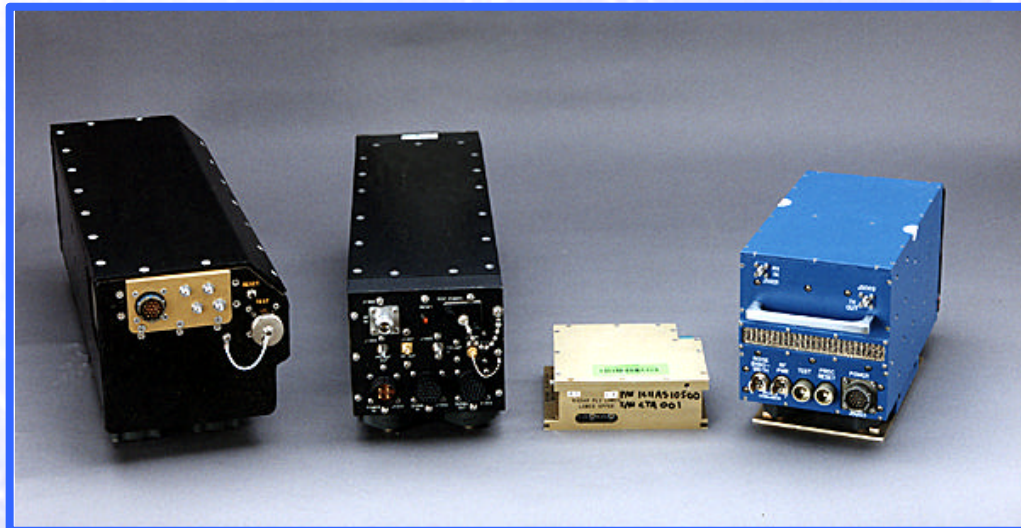


ARMY

NAVY HAS THE LEAD FOR TRI-SERVICE RF EMITTER TARGETS. THIS LEAD INCLUDES ALL EA AND RADAR SIGNAL SIMULATORS USED IN TARGETS.



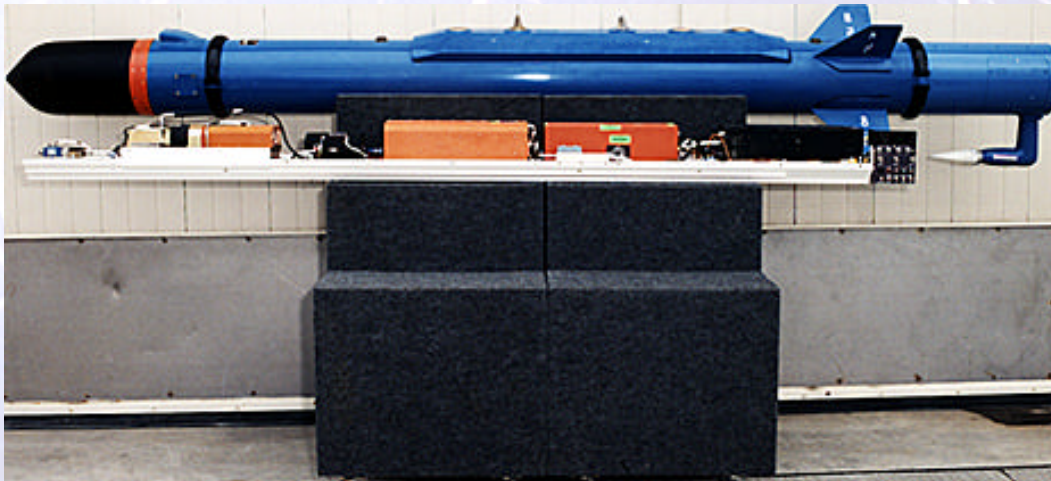
Replica-Grade Systems



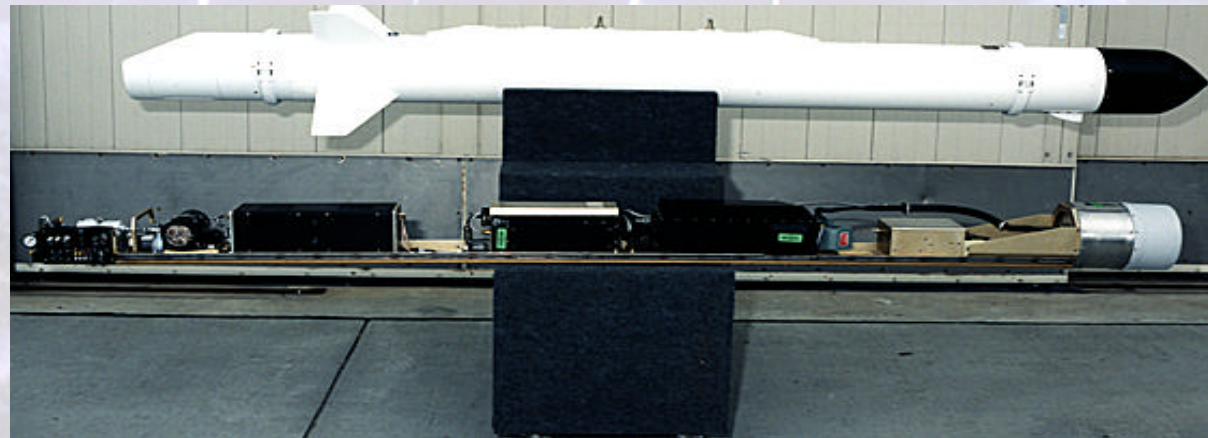


NAWCWPNS Products

ALQ-167



AST-6





Hydra-Central Focus





Examples of Weapon Systems Supported

➤ NAVAIR

➤ F/A-18 E/F

➤ AIM-7R

➤ F-14D

➤ NAVSEA

➤ Aegis

➤ RAM

➤ RIM-7R

➤ SM-II BLOCK IIIB

■ AIR FORCE

■ AMRAAM

■ F-15

■ F-16

■ F-22

■ JSF



Exploitation





Typical Exploitation Process

- Requirement (STAR, etc)
- Examine Intel
- Participate in FME (ONI, NAIC, CIA, Foreign, etc)
 - Planning
 - Equipment
 - *ATSO unique tests! (FME's DON'T give whole story if you are going to BUILD it!)*
 - Build-it
 - Sim spec
 - Design team
 - Design Reviews (PDR/CDR...)
 - Participate in radar testing against real system



Exploitation (Cont'd)

- Radar data analysis
- Begin VALIDATION (NAIC)
- Prelim side-by-side tests (lab and air)
- HW/SW Config mgt (FREEZE design)
- Production
- Continuous updates
- Spares...





Verification

- Requirements (from STAR, Weapons programs, Emerging Reqmt's)
- System Acquisition (FME)/Paper Study (Intel assm't)
- FMER Written
- ATSO Generates Spec based on FME
- Design/production of Threat EA Simulator
- **Process is monitored by NAIC/DIA...somewhat informal at this point**





Validation

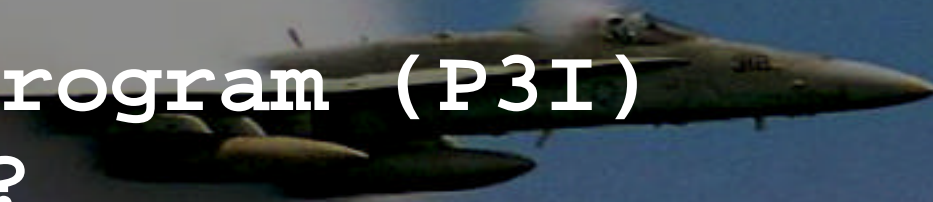
- ATSO initial production
- Test against various radar systems (I.e. HIL's, Flight Tests...)
- Side-by side systems testing
- Report...





Accreditation Mechanics

- Lab tests against FMER
- Additional side-by-side tests?
- Characterization/parametric and operational comparison
- Upgrade program (P3I) initiated?
- Additional intel, system upgrades...





Accreditation

- **Formal Process!**
- NAIC (under DIA charter) performs validation/accreditation based on DoDI and AFI's
- Replaces CROSSBOW (more streamlined and practical) and TSO
- Results in final Validation Report
 - Is a type of metric for system fidelity
 - NOT necessarily a passing grade!
 - A "living" document
- **Process is fairly new for Airborne EA systems**



Of course,
our ever-
present
challenge...FUN
DING...



Subject: FW Military.jpg

**Message: This is to help answer the question of how
Al Gore plans on funding the Military.**



The Future of Military Funding